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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/511,118	02/23/2000	Justin A Drummond-Murray	922-83	4104

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EXAMINER
HO, CHUONG T

ART UNIT	PAPER NUMBER
2664	

DATE MAILED: 05/17/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

	Application No.	Applicant(s)
Office Action Summary	09/511,118	DRUMMOND-MURRAY ET AL.
	Examiner	Art Unit
	CHUONG T. HO	2664

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE <u>3</u> MONTH(S) FROM
THE MAILING DATE OF THIS COMMUNICATION.
- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed
  after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
  Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any
  earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☐ Responsive to communication(s) filed on _____.

2a)☐ This action is **FINAL**.   2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is
closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-6* is/are pending in the application.

    4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1,3 and 5* is/are rejected.

7)☒ Claim(s) *2,4 and 6* is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

    Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

    Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

    a)☐ All   b)☐ Some * c)☐ None of:

      1.☐ Certified copies of the priority documents have been received.

      2.☐ Certified copies of the priority documents have been received in Application No. _____.

      3.☐ Copies of the certified copies of the priority documents have been received in this National Stage
application from the International Bureau (PCT Rule 17.2(a)).

    * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1)☒ Notice of References Cited (PTO-892)

2)☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)

3)☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
    Paper No(s)/Mail Date <u>09/01/00</u>.

4)☐ Interview Summary (PTO-413)
    Paper No(s)/Mail Date. _____ .

5)☐ Notice of Informal Patent Application (PTO-152)

6)☐ Other: _____.

U.S. Patent and Trademark Office

PTOL-326 (Rev. 1-04)   Office Action Summary   Part of Paper No./Mail Date 7

1.   Claims 1-6 are pending.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all

obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

2.   Claims 1, 3, 5 are rejected under 35 U.S.C. 103(a) as being unpatentable over

Szczepanek et al. (U.S.Patent No. 6,690,668) in view of Merchant et al. (U.S.Patent No.

6,546,010 B1).

Regarding to claim 1, Szczepanek et al. (U.S.Patent No. 6,690,668 B1) discloses

network switching systems (10, 110, 210, 310, 410) for use in an Ethernet network are

disclosed. Each of the switching systems includes switch device (20) (network unit)

supporting multiple (e.g., eight) local ports, and one gigabit high-speed port; each of the

high-speed ports are full-duplex ports (see abstract). Upon receipt of a message packet

at one of its local ports, the switches (20) attach a pretag with the Ring ID value upon

the packet, and begin forwarding the packet around the ring until the destination

address is registered with one of the switches (20, 30), or until the packet returns to the

original switch (20) which, upon detecting its own Ring ID value, filter or discards the

packet (see abstract); comprising:

- See figure 3, a packet-switched network system (10) comprising: a multiplicity of

     multi-port network units (20, 30) each of which has first and second ports and

     other ports (see figure 3);

- Transmission links coupling the first and second ports of units (20, 30) in a closed ring, first and second ports and transmission links supporting duplex (see abstract) transmission of data packets (see abstract, figure 3);

- Each unit has forwarding database (48, see figure 4, col. 7, lines 47-55) and in response to selected information controls the transmission of packets in two directions around ring (see figures 3, 4, col. 7, lines 47-55).

However, Szczepanek et al. is silent to disclosing a determination of a number of hops from unit to unit around ring packet has made.

Merchant et al. (U.S.Patent No. 6,546,010 B1) discloses it is desirable to minimize the number of "hops" that the frame has to make when removing it from indefinite circulation; i.e., reducing the number of network switch modules that has to process the frame. In one conventional approach, the hop count value is embedded in the frame and is updated by each of the network switch modules as the frame is transferred among them. Also, each network switch module is aware of the total number of network switch module constituting the loop. When a frame is first received by a network switch module, this originating module writes a hop count value of, for example, 1 into the received frame prior to forwarding it an adjacent network switch module. Subsequent network switch modules are responsible for incrementing the hop count value as the frame traverses the cascaded loop. At each network switch module, the frame's hop count value is examined to check whether the hop count value has exceeded a threshold value, namely the total number of network switch modules. On

the threshold value is exceeded, the frame is no longer forwarded (see col. 1, lines 32–48); comprising:

- See figures 5, 7, a packet-switched network system comprising: a multiplicity of multi-port network units (DEV_ID = 1, 2, 3) each of which has first and second ports and other ports, and

- Transmission links coupling the first and second ports of units in closed ring, first and second ports and transmission links supporting duplex transmission of data packets (see figures 5, 7);

- Wherein each unit (DEV_ID = 1, 2, 3) transmits from first and second ports packets including selected information enabling on reception of a packets at any of the units a determination of number of hops from unit to unit around ring packet has made (see col. 1, lines 32–48);

- Each unit has a forwarding database (see figure 2, IRC 40, col. 6, lines 30-35) and in response to the selected information controls the transmission of packets in two directions around ring.

Both Szczepanek, Merchant discloses a packet-switch network system a packet-switched network system comprising: a multiplicity of multi-port network units , each of which has first and second ports and other ports, and transmission links coupling the first and second ports of units in closed ring, first and second ports and transmission links supporting duplex transmission of data packets. Merchant recognizes Wherein each unit (DEV_ID = 1, 2, 3) transmits from first and second ports packets including selected information enabling on reception of a packets at any of the units a

determination of number of hops from unit to unit around ring packet has made. Thus, it

would have been obvious to one of ordinary skill in the art at the time of the invention to

modify the system of Szczepanek with the teaching of Merchant to determine of number

of hops from unit to unit around ring packet has made in order minimize the number of

hops. Therefore, the combined system would have been noted the hop count value

equals the total number of cascaded network switch modules and consequently decides

not to forward the frame.

3.   Regarding to claim 3, Szczepanek et al. (U.S.Patent No. 6,690,668 B1) discloses

network switching systems (10, 110, 210, 310, 410) for use in an Ethernet network are

disclosed. Each of the switching systems includes switch device (20) (network unit)

supporting multiple (e.g., eight) local ports, and one gigabit high-speed port; each of the

high-speed ports are full-duplex ports (see abstract). Upon receipt of a message packet

at one of its local ports, the switches (20) attach a pretag with the Ring ID value upon

the packet, and begin forwarding the packet around the ring until the destination

address is registered with one of the switches (20, 30), or until the packet returns to the

original switch (20) which, upon detecting its own Ring ID value, filter or discards the

packet (see abstract); comprising:

- See figure 3, a packet-switched network system (10) comprising: a multiplicity of

  multi-port network units (20, 30) each of which has first and second ports and

  other ports (see figure 3);

- Transmission links coupling the first and second ports of units (20, 30) in a

    closed ring, first and second ports and transmission links supporting duplex (see

    abstract) transmission of data packets (see abstract, figure 3);

- Each unit has forwarding database (48, see figure 4, col. 7, lines 47-55) and in

    response to selected information controls the transmission of packets in two

    directions around ring (see figures 3, 4, col. 7, lines 47-55).

However, Szczepanek et al. is silent to disclosing a determination of a number of

hops from unit to unit around ring packet has made.

Merchant et al. (U.S.Patent No. 6,546,010 B1) discloses it is desirable to

minimize the number of "hops" that the frame has to make when removing it from

indefinite circulation; i.e., reducing the number of network switch modules that has to

process the frame. In one conventional approach, the hop count value is embedded in

the frame and is updated by each of the network switch modules as the frame is

transferred among them. Also, each network switch module is aware of the total number

of network switch module constituting the loop. When a frame is first received by a

network switch module, this originating module writes a hop count value of, for example,

1 into the received frame prior to forwarding it an adjacent network switch module.

Subsequent network switch modules are responsible for incrementing the hop count

value as the frame traverses the cascaded loop. At each network switch module, the

frame's hop count value is examined to check whether the hop count value has

exceeded a threshold value, namely the total number of network switch modules. On

the threshold value is exceeded, the frame is no longer forwarded (see col. 1, lines 32-

48); comprising:

- See figures 5, 7, a packet-switched network system comprising: a multiplicity of

  multi-port network units (DEV_ID = 1, 2, 3) each of which has first and second

  ports and other ports, and

- Transmission links coupling the first and second ports of units in closed ring, first

  and second ports and transmission links supporting duplex transmission of data

  packets (see figures 5, 7);

- Wherein each unit (DEV_ID = 1, 2, 3) transmits from first and second ports

  packets including selected information enabling on reception of a packets at any

  of the units a determination of number of hops from unit to unit around ring

  packet has made (see col. 1, lines 32–48);

- Each unit has a forwarding database (see figure 2, IRC 40, col. 6, lines 30-35)

  and in response to the selected information controls the transmission of packets

  in two directions around ring.

Both Szczepanek, Merchant discloses a packet-switch network system a packet-

switched network system comprising: a multiplicity of multi-port network units , each of

which has first and second ports and other ports, and transmission links coupling the

first and second ports of units in closed ring, first and second ports and transmission

links supporting duplex transmission of data packets. Merchant recognizes Wherein

each unit (DEV_ID = 1, 2, 3) transmits from first and second ports packets including

selected information enabling on reception of a packets at any of the units a

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would have been obvious to one of ordinary skill in the art at the time of the invention to

modify the system of Szczepanek with the teaching of Merchant to determine of number

of hops from unit to unit around ring packet has made in order minimize the number of

hops. Therefore, the combined system would have been noted the hop count value

equals the total number of cascaded network switch modules and consequently decides

not to forward the frame.

4.   Regarding to claim 5, Szczepanek et al. (U.S.Patent No. 6,690,668 B1) discloses

network switching systems (10, 110, 210, 310, 410) for use in an Ethernet network are

disclosed. Each of the switching systems includes switch device (20) (network unit)

supporting multiple (e.g., eight) local ports, and one gigabit high-speed port; each of the

high-speed ports are full-duplex ports (see abstract). Upon receipt of a message packet

at one of its local ports, the switches (20) attach a pretag with the Ring ID value upon

the packet, and begin forwarding the packet around the ring until the destination

address is registered with one of the switches (20, 30), or until the packet returns to the

original switch (20) which, upon detecting its own Ring ID value, filter or discards the

packet (see abstract); comprising:

- See figure 3, a packet-switched network system (10) comprising: a multiplicity of
  multi-port network units (20, 30) each of which has first and second ports and
  other ports (see figure 3);

- Transmission links coupling the first and second ports of units (20, 30) in a closed ring, first and second ports and transmission links supporting duplex (see abstract) transmission of data packets (see abstract, figure 3);

- Each unit has forwarding database (48, see figure 4, col. 7, lines 47-55) and in response to selected information controls the transmission of packets in two directions around ring (see figures 3, 4, col. 7, lines 47-55).

However, Szczepanek et al. is silent to disclosing a determination of a number of hops from unit to unit around ring packet has made.

Merchant et al. (U.S.Patent No. 6,546,010 B1) discloses it is desirable to minimize the number of "hops" that the frame has to make when removing it from indefinite circulation; i.e., reducing the number of network switch modules that has to process the frame. In one conventional approach, the hop count value is embedded in the frame and is updated by each of the network switch modules as the frame is transferred among them. Also, each network switch module is aware of the total number of network switch module constituting the loop. When a frame is first received by a network switch module, this originating module writes a hop count value of, for example, 1 into the received frame prior to forwarding it an adjacent network switch module. Subsequent network switch modules are responsible for incrementing the hop count value as the frame traverses the cascaded loop. At each network switch module, the frame's hop count value is examined to check whether the hop count value has exceeded a threshold value, namely the total number of network switch modules. On

the threshold value is exceeded, the frame is no longer forwarded (see col. 1, lines 32-

48); comprising:

- See figures 5, 7, a packet-switched network system comprising: a multiplicity of
  multi-port network units (DEV_ID = 1, 2, 3) each of which has first and second
  ports and other ports, and

- Transmission links coupling the first and second ports of units in closed ring, first
  and second ports and transmission links supporting duplex transmission of data
  packets (see figures 5, 7);

- Wherein each unit (DEV_ID = 1, 2, 3) transmits from first and second ports
  packets including selected information enabling on reception of a packets at any
  of the units a determination of number of hops from unit to unit around ring
  packet has made (see col. 1, lines 32–48);

- Each unit has a forwarding database (see figure 2, IRC 40, col. 6, lines 30-35)
  and in response to the selected information controls the transmission of packets
  in two directions around ring.

Both Szczepanek, Merchant discloses a packet-switch network system a packet-

switched network system comprising: a multiplicity of multi-port network units , each of

which has first and second ports and other ports, and transmission links coupling the

first and second ports of units in closed ring, first and second ports and transmission

links supporting duplex transmission of data packets. Merchant recognizes Wherein

each unit (DEV_ID = 1, 2, 3) transmits from first and second ports packets including

selected information enabling on reception of a packets at any of the units a

determination of number of hops from unit to unit around ring packet has made. Thus, it

would have been obvious to one of ordinary skill in the art at the time of the invention to

modify the system of Szczepanek with the teaching of Merchant to determine of number

of hops from unit to unit around ring packet has made in order minimize the number of

hops. Therefore, the combined system would have been noted the hop count value

equals the total number of cascaded network switch modules and consequently decides

not to forward the frame.

Allowable Subject Matter

5.   Claims 2, 4, 6 are objected to as being dependent upon a rejected base claim,

but would be allowable if rewritten in independent form including all of the limitations of

the base claim and any intervening claims.

6.   The following is an examiner's statement of reasons for allowance: the prior art

(6757279, 6546010, 6690668, 6490668, 6490276, 6331985) of record does not appear

to teach or render obvious the dependent claimed limitations "(ii) when the number is

less than half the total number of hops around the ring, to learn a source address of the

packet as that one of the first and second ports at which the packet was received, (iii)

when the number is greater than half the total number of hops around the ring, to learn

a source address for the packet as that one of the first and second ports other than that

at which the packet was received".

Any comments considered necessary by applicant must be submitted no later

than the payment of the issue fee and, to avoid processing delays, should preferably
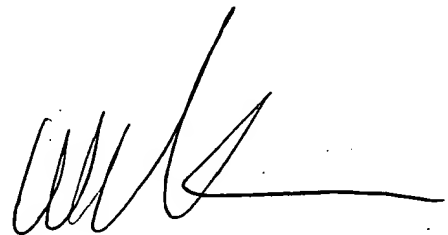
accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

Any inquiry concerning this communication or earlier communications from the examiner should be directed to CHUONG T. HO whose telephone number is (571) 272-3133. The examiner can normally be reached on 8:00 am to 4:00 pm.

The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

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